

How-to in examples

Advanced plotting in EXFOR-ENDF Web retrieval system

Screen shot 1.

Start from:
EXFOR Request page.

To do: specify needed data and submit request for data search

Experimental Nuclear Reaction Data (EXFOR/CSIRS) - Microsoft Internet Explorer provided by IAEA

File Edit View Favorites Tools Help

Address <http://nds121.iaea.org/exfor2/exfor00.htm> Go Links

Experimental Nuclear Reaction Data (EXFOR)

Database Version of June 20, 2006

News
Advanced plotting: experimental and evaluated data [example]

The EXFOR library contains an extensive compilation of experimental nuclear reaction data. Neutron reactions have been compiled systematically since the discovery of the neutron, while charged particle and photon reactions have been covered less extensively. The library contains data from more than 15,500 experiments.

Standard Request (example); Requests: [Extended](#) [Advanced](#)

Submit Reset

Target ☒ F-19
Reaction ☒ N,X
Product ☐ NN-1
Quantity ☒ DA; DE; DAE; DAP
Energy from 0 to 20e6 eV
Author(s)
Publication year
Accession #

Options

☒ Exclude superseded data
☒ No reaction combinations (ratios, etc.)
Sort by:
☒ Reaction
☐ Accession# (Entry#, Subent#)

Feedback and User's Input

[Comments/Questions?](#)
[Submit your experimental data for input to the database](#)

Clone Request:
CINDA ENDF

Note:
- all criteria are optional (selected by checking ☒)
- selected criteria are combined for search with logical AND
- criteria separated in a field by ";" are combined with logical OR
- wildcards and intervals are available

Database Manager: Otto Schwerer, NDS, International Atomic Energy Agency (O.Schwerer@iaea.org)
Web and Database Programming: Viktor Zerkov, NDS, International Atomic Energy Agency (V.Zerkov@iaea.org)
Data Source: [Network of Nuclear Reaction Data Centres](#), coordinator: Otto Schwerer, NDS, IAEA (O.Schwerer@iaea.org)

Window: Clone_EXFOR...DA_496171379844049047 Local intranet

Search
parameters

Help

Screen shot 2.

EXFOR Select page.

To do: select data and output options and submit request for output

X4/Servlet: Select - Microsoft Internet Explorer provided by IAEA

Address: <http://nds121.iaea.org/exfor2/servlet/X4sSearch5>

Request #110
Results: Reactions: 4 Datasets: 9

Data Selection

Submit Reset

Data for Output: ☒ Selected ☐ Unselected ☐ All

Output Formats: ☒ EXFOR ☒ Bibliography ☐ Quick plot ☒ Advanced plot (news & how-to) [test version]

Computational Output: 1) TAB ☐ 2) C4 ☐ &Plot,PS ☐

Narrow Energy (optional), eV: Min: Max:

n	Display	Year	Author-1	Energy range,eV	Points	Reference	Accession#
1)	Info	9-F-19(N,X)0-G-0,,DA/DE					
	Quantity: [DAE] Double diff.cross section d2/dA/dE						
1	Info X4 T4	1974	J.K.Dickens+	1.26e+6 2.00e+7	2108	R,ORNL-TM-4538,197404	10502002
2)	Info	9-F-19(N,X)0-G-0,PAR,DA					
	Quantity: [DAP] Partial differential cross section d/dA						
2	Info X4 T4	1976	G.L.Morgan+	1.01e+5 1.94e+7	413	J,NSE,60,36,197605	10583003
3	Info X4 T4			1.88e+5 1.86e+7	150		004
3)	Info	9-F-19(N,X)0-MN-1,,DA/DE					
	Quantity: [DAE] Double diff.cross section d2/dA/dE						
4	Info X4 T4	1988	A.Takahashi+	1.41e+7	1048	J,NST,25,215,198803	22075113
5	Info X4 T4	1985	M.Baba+	1.42e+7	671	C,85SANTA,1,223,6505	21984097
6	Info X4 T4	1984	A.Takahashi+	1.35e+7 1.48e+7	518	J,NST,21,577,198408	21927011
7	Info X4 T4	1982	A.Takahashi+		0	C,82ANTWER,,360,198209	21875042
4)	Info	9-F-19(N,X)0-MN-1,,DE					
	Quantity: [DE] Energy spectrum of outgoing particles						
8	Info X4 T4	1988	A.Takahashi+	1.41e+7	80	J,NST,25,215,198803	22075014
9	Info X4 T4			1.41e+7	80		015

☒ Show Summary (with code explanation, links to dependent data, etc.)
☒ X4 = EXFOR
☒ T4 = Tabulated Data

Cross sections only

Universal advanced plot

Data selection

EXFOR Output page.

**To do: go to plotting selected quantity, or
go to retrieve and plot evaluated data**

Note: differential cross section data (d/dA) can be plotted by two alternative ways

EXFOR Request #110 (14)

Output Data

Format	Data (Size)
EXFOR	Text (435Kb) ZIP (75Kb)
Bibliography	html (8Kb)
Computational	
C4	C4 (654Kb) ZIP (57Kb) LST (4Kb)

Advanced Plotting: [LST](#) (8Kb)

Select experimental data for plotting...

Go to	Quantity type	#Plots
DA(A)	Differential data with respect to angle	34
Alt: Select energy range(MeV): Min= <input type="text" value="0.1"/> Max= <input type="text" value="19.4"/>		DA(A) 563 [Reset]
DA(E)	Differential data - energy dependence at fixed angle	1
Alt: Select angle range(deg): Min= <input type="text" value="92"/> Max= <input type="text" value="125"/>		DA(E) 2 [Reset]
DE	Differential data with respect to energy	1
DA/DE	Differential data with respect to angle and energy	53

Go to plot evaluated data...

ENDF	Retrieve evaluated data and plot...
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Page generated: 2006-07-12 12:01:48 by X4-Servlet on nds121.iaea.org
 Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zerkov](#), IAEA, 1999-2006
 Request from: po29517.iaea.org (151.5.149.203)

Done Local intranet

Plot experimental data separated by quantities

Alternative plotting

Plot double differential cross sections

Retrieve and plot evaluated data

Page: selection of plots.

To do: select dataset for plot and request plotting
option: go to single plot by direct link

Microsoft Internet Explorer provided by IAEA

Address: <http://nds121.iaea.org/exfor2/servlet/X4sProcessC4?x4Req=110&MF=60&e4Req=-1>

EXFOR-Request #110

Advanced Plotting

Plot Selected Reset

Differential data with respect to angle and energy: MF6 [DA/DE]

#	Index (plot)	Exp. points	E-Inc (eV)	Ang-Out (deg.)	ELy/E-Out (eV)	Target	Target ZA	Projectile ZA	Product ZA	Quantity (MF)	Reaction (MT)
9-F-19(N,X)0-NN-1,,DA/DE											
1	37	54	1.345E+7	145.00		F-19	9019	1	1	6	9000
2	38	57	1.356E+7	135.00		F-19	9019	1	1	6	9000
3	39	60	1.395E+7	105.00		F-19	9019	1	1	6	9000
4	40	55	1.410E+7	160.00		F-19	9019	1	1	6	9000
5	41	56	1.410E+7	155.00		F-19	9019	1	1	6	9000
6	42	58	1.410E+7	140.00		F-19	9019	1	1	6	9000
7	43	61	1.410E+7	120.00		F-19	9019	1	1	6	9000
8	44	61	1.410E+7	110.00		F-19	9019	1	1	6	9000
9	45	63	1.410E+7	100.00		F-19	9019	1	1	6	9000
10	46	65	1.410E+7	90.00		F-19	9019	1	1	6	9000
11	47	65	1.410E+7	80.00		F-19	9019	1	1	6	9000
12	48	67	1.410E+7	70.00		F-19	9019	1	1	6	9000
13	49	68	1.410E+7	60.00		F-19	9019	1	1	6	9000
14	50	70	1.410E+7	45.00		F-19	9019	1	1	6	9000
15	51	70	1.410E+7	35.00		F-19	9019	1	1	6	9000
16	52	70	1.410E+7	30.00		F-19	9019	1	1	6	9000
17	53	74	1.410E+7	25.00		F-19	9019	1	1	6	9000

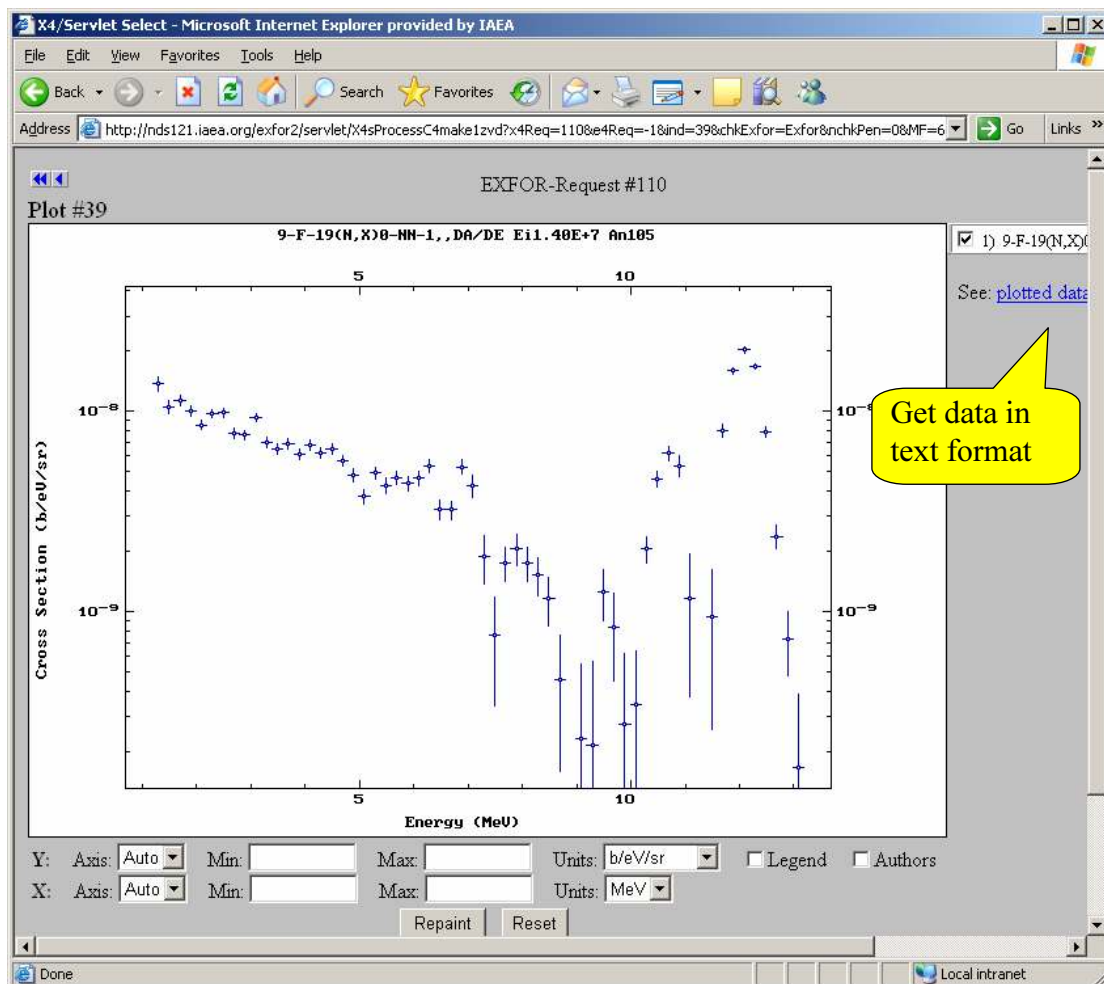
Local intranet

Select data for plotting

Screen shot 5.

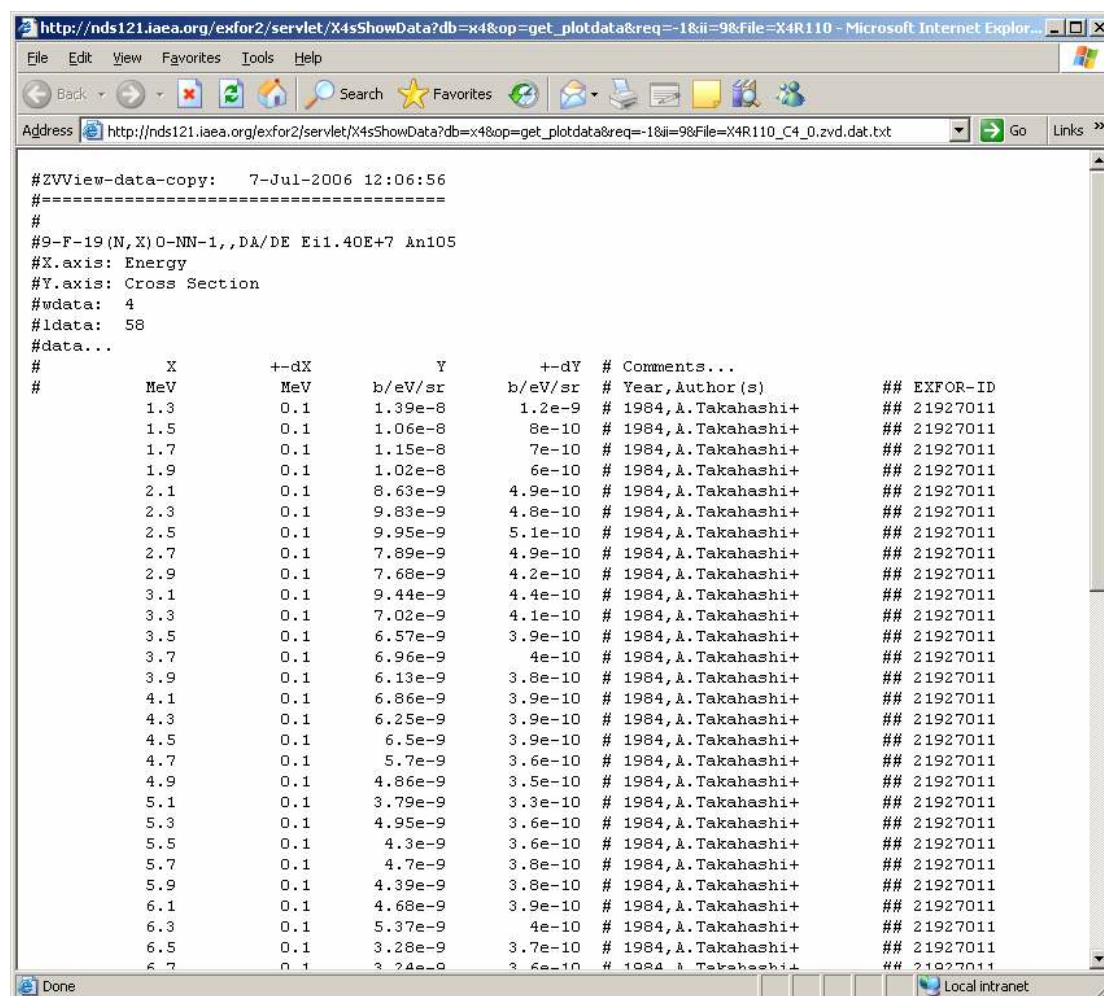
Plot page.

**To do: change parameters of the picture and repaint, or
go to page with data in the text column format**



Data in the text column format.

To do: save data for further use (e.g. by your own plotting software)



```

#ZVView-data-copy: 7-Jul-2006 12:06:56
#=====
#
#9-F-19(N,X)O-NN-1,,DA/DE Ei1.40E+7 An105
#X.axis: Energy
#Y.axis: Cross Section
#wdata: 4
#ldata: 58
#data...
#
#      X      +-dX      Y      +-dY # Comments...      ## EXFOR-ID
#      MeV      MeV      b/eV/sr      b/eV/sr # Year, Author(s)      ##
1.3      0.1      1.39e-8      1.2e-9 # 1984, A. Takahashi+      ## 21927011
1.5      0.1      1.06e-8      8e-10 # 1984, A. Takahashi+      ## 21927011
1.7      0.1      1.15e-8      7e-10 # 1984, A. Takahashi+      ## 21927011
1.9      0.1      1.02e-8      6e-10 # 1984, A. Takahashi+      ## 21927011
2.1      0.1      8.63e-9      4.9e-10 # 1984, A. Takahashi+      ## 21927011
2.3      0.1      9.83e-9      4.8e-10 # 1984, A. Takahashi+      ## 21927011
2.5      0.1      9.95e-9      5.1e-10 # 1984, A. Takahashi+      ## 21927011
2.7      0.1      7.89e-9      4.9e-10 # 1984, A. Takahashi+      ## 21927011
2.9      0.1      7.68e-9      4.2e-10 # 1984, A. Takahashi+      ## 21927011
3.1      0.1      9.44e-9      4.4e-10 # 1984, A. Takahashi+      ## 21927011
3.3      0.1      7.02e-9      4.1e-10 # 1984, A. Takahashi+      ## 21927011
3.5      0.1      6.57e-9      3.9e-10 # 1984, A. Takahashi+      ## 21927011
3.7      0.1      6.96e-9      4e-10 # 1984, A. Takahashi+      ## 21927011
3.9      0.1      6.13e-9      3.8e-10 # 1984, A. Takahashi+      ## 21927011
4.1      0.1      6.86e-9      3.9e-10 # 1984, A. Takahashi+      ## 21927011
4.3      0.1      6.25e-9      3.9e-10 # 1984, A. Takahashi+      ## 21927011
4.5      0.1      6.5e-9      3.9e-10 # 1984, A. Takahashi+      ## 21927011
4.7      0.1      5.7e-9      3.6e-10 # 1984, A. Takahashi+      ## 21927011
4.9      0.1      4.86e-9      3.5e-10 # 1984, A. Takahashi+      ## 21927011
5.1      0.1      3.79e-9      3.3e-10 # 1984, A. Takahashi+      ## 21927011
5.3      0.1      4.95e-9      3.6e-10 # 1984, A. Takahashi+      ## 21927011
5.5      0.1      4.3e-9      3.6e-10 # 1984, A. Takahashi+      ## 21927011
5.7      0.1      4.7e-9      3.8e-10 # 1984, A. Takahashi+      ## 21927011
5.9      0.1      4.39e-9      3.8e-10 # 1984, A. Takahashi+      ## 21927011
6.1      0.1      4.68e-9      3.9e-10 # 1984, A. Takahashi+      ## 21927011
6.3      0.1      5.37e-9      4e-10 # 1984, A. Takahashi+      ## 21927011
6.5      0.1      3.28e-9      3.7e-10 # 1984, A. Takahashi+      ## 21927011
6.7      0.1      3.24e-9      3.6e-10 # 1984, A. Takahashi+      ## 21927011

```

Screen shot 7.
(Continue of Screen shot 3.)

ENDF Select page.

To do: select data and submit request for output

Request #17

ENDF Data Selection (Advanced Plot for EXFOR Request #110)

Retrieve+Plot Reset

Data Selection: ☒ Selected ☐ Unselected ☐ All

Sorted by: [Libraries] Reorder by: [Reactions]

1)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JENDL-3.3	JAERI	T. SUGI
2)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JENDL-3.3 300	JAERI	T. SUGI
3)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	ENDF/B-VI	CNDC, ORNL	Z.X. ZHAO, C.Y. FU, D.C
4)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	ENDF/B-VI 300	CNDC, ORNL	Z.X. ZHAO, C.Y. FU, D.C
5)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JEFF-2.2	NEA	SCIENTIFIC CO-ORDIN
6)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JEFF-3.0	CNDC, ORNL	Z.X. ZHAO, C.Y. FU, D.C
7)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JEFF-3.1	CNDC, ORNL	Z.X. ZHAO, C.Y. FU, D.C
8)	Info	Eval	MAT	9-F-19	MAT=2091 NSUB=10 (N)	20MeV	CENDL-2	CNDC, ORNL	Z.X. ZHAO, C.Y. FU, D.C
9)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	20MeV	JEFF-3.1/A 293	UKAEA	Forrest, Kopecky, S
10)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	30MeV	IRDF-2002 300	FEI	K.I. Zolotarev
11)	Info	Eval	MAT	9-F-19	MAT=925 NSUB=10 (N)	30MeV	IRDF-2002G 300	FEI	K.I. Zolotarev
12)	Info	Eval	MAT	9-F-19	MAT=919 NSUB=10 (N)	20MeV	BROND-2	FEI	BLOKHIN A.I., RABOTN

[Glossary]: meaning of abbreviations and variables
[About]: a few words on ENDF-6 format

Page generated: 2006/07/07, 12:07:52 by E4-Servlet on nds121.iaea.org
Project: "Multi-platform EXFOR-CINDA-ENDF", V.Zeikin, IAEA, 1999-2006
Request from: pc29517.iaea.org (161.5.149.203)

[Information Section] Local intranet

ENDF Output page.

To do: go to plotting selected quantity

E4/Servlet: Output - Microsoft Internet Explorer provided by IAEA

Address: <http://nds121.iaea.org/exfor2/servlet/E4sMakeE4>

ENDF Request #17 (14)

Output Data

Format	Data (Size)
ENDF	Text (1226Kb) ZIP (254Kb)

Advanced Plotting:

Step 1. Select/prepare data for plotting...

#	Library	Nuclide	Status	Prepared data
1) <input checked="" type="checkbox"/>	ENDF/B-VI id=60	F-19 id= 9110	-Ready-	PEN LST
2) <input checked="" type="checkbox"/>	JEF-2.2 id=2220	F-19 id= 6978	-Ready-	PEN LST
3) <input checked="" type="checkbox"/>	BROND-2 id=41020	F-19 id= 4487	-Ready-	PEN LST
4) <input checked="" type="checkbox"/>	EXFOR Request #110		-Ready-	C4 LST X4

Step 2. Go to plotting...

Go to plot	Quantity type	MF# #Plots
DA(A)	Differential data with respect to angle	MF4 34
DA(E)	Differential data - energy dependence at fixed angle	MF4 1
DE	Differential data with respect to energy	MF5 1
DA/DE	Differential data with respect to angle and energy	MF6 53

Page generated: 2006/07/07, 12:10:12 by E4-Servlet on nds121.iaea.org
 Project: "Multi-platform EXFOR-CINDA-ENDF", [V.Zeikin](#), IAEA, 1999-2006
 Request from: pc29517.iaea.org (161.5.149.203)

Done Local intranet

Page: selection of plots.

To do: select datasets for plot and request plotting
option: go to single plot by direct link

X4/Servlet Select - Microsoft Internet Explorer provided by IAEA

Address <http://nds121.iaea.org/exfor2/servlet/X4sProcessC4?x4Req=110&e4Req=17&MF=60&chkPen0=9110&namPen0=ENDF%2FB-VI%3A> Go Links »

EXFOR-Request #110 ENDF-Request #17

Advanced Plotting

Plot Selected Reset

Libraries:

- ☒ EXFOR - Experimental data
- ☒ ENDF/B-VI: F-19 (EvalID=9110)
- ☒ JEF-2.2: F-19 (EvalID=6978)
- ☒ BROND-2: F-19 (EvalID=4487)

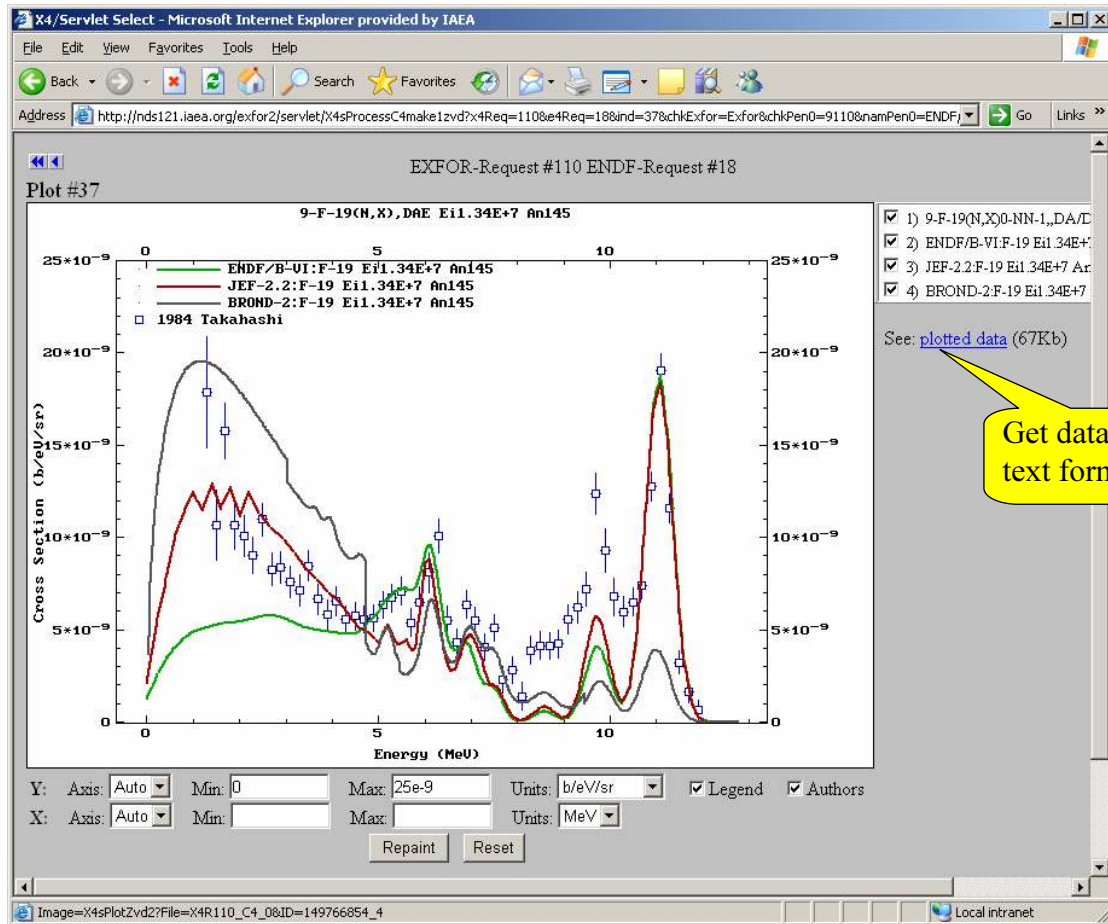
Differential data with respect to angle and energy: MF6 [DA/DE]

#	Index (plot)	Exp. points	E-Inc (eV)	Ang-Out (deg.)	ELy/E-Out (eV)	Target	Target ZA	Projectile ZA	Product ZA	Quantity (MF)	Reaction (MT)
9-F-19(N,X)0-NN-1,,DA/DE											
1	37	54	1.345E+7	145.00		F-19	9019	1	1	6	9000
2	38	57	1.356E+7	135.00		F-19	9019	1	1	6	9000
3	39	60	1.395E+7	105.00		F-19	9019	1	1	6	9000
4	40	55	1.410E+7	160.00		F-19	9019	1	1	6	9000
5	41	56	1.410E+7	155.00		F-19	9019	1	1	6	9000
6	42	58	1.410E+7	140.00		F-19	9019	1	1	6	9000
7	43	61	1.410E+7	120.00		F-19	9019	1	1	6	9000
8	44	61	1.410E+7	110.00		F-19	9019	1	1	6	9000
9	45	63	1.410E+7	100.00		F-19	9019	1	1	6	9000
10	46	65	1.410E+7	90.00		F-19	9019	1	1	6	9000
11	47	65	1.410E+7	80.00		F-19	9019	1	1	6	9000
12	48	67	1.410E+7	70.00		F-19	9019	1	1	6	9000
13	49	68	1.410E+7	60.00		F-19	9019	1	1	6	9000
14	50	70	1.410E+7	45.00		F-19	9019	1	1	6	9000

Local intranet

Plot page.

To do: change parameters of the picture and repaint, or
go to page with data in the text column format



Screen shot 11.

Data in the text column format.

To do: save both experimental and evaluated data for further use

http://nds121.iaea.org/exfor2/servlet/X4sShowData?db=x4&op=get_plotdata&req=-1&ii=11&File=X4R11 - Microsoft Inter...

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address http://nds121.iaea.org/exfor2/servlet/X4sShowData?db=x4&op=get_plotdata&req=-1&ii=11&File=X4R110_C4_0.zvd.dat Go Links >>

10.5	0.1	6.54e-9	7.5e-10	# 1984, A. Takahashi+	## 21927011
10.7	0.1	7.41e-9	7.1e-10	# 1984, A. Takahashi+	## 21927011
10.9	0.1	1.28e-8	8e-10	# 1984, A. Takahashi+	## 21927011
11.1	0.1	1.91e-8	9e-10	# 1984, A. Takahashi+	## 21927011
11.3	0.1	1.16e-8	8e-10	# 1984, A. Takahashi+	## 21927011
11.5	0.1	3.26e-9	6.3e-10	# 1984, A. Takahashi+	## 21927011
11.7	0.1	1.64e-9	5.8e-10	# 1984, A. Takahashi+	## 21927011
11.9	0.1	6.91e-10	5.47e-10	# 1984, A. Takahashi+	## 21927011
//					
#-----					
#					
#ENDF/B-VI:F-19 Ei1.34E+7 An145					
#X.axis: Energy					
#Y.axis: Cross Section					
#wdata: 2					
#ldata: 676					
#data...					
#	X	Y			
#	MeV	b/eV/sr			
	0	1.2469e-9			
	0.181034	2.3049e-9			
	0.185	2.3264e-9			
	0.195	2.3844e-9			
	0.214211	2.4829e-9			
	0.21875	2.5083e-9			
	0.26	2.7129e-9			
	0.362069	3.2049e-9			
	0.37	3.2419e-9			
	0.375	3.264e-9			
	0.39	3.3303e-9			
	0.428421	3.4747e-9			
	0.4375	3.5075e-9			
	0.485294	3.6684e-9			
	0.52	3.7852e-9			

Done Local intranet